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THOMAS G. NEWMAN, Editor.

EDITORIAL

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**Mr. T. W. Cowan** visited Prof. A. J. Cook, at the Michigan Agricultural College, last week. This week he intends to visit Chicago and Hamilton, Ill., returning by the way of Medina, O., and Niagara Falls to Toronto, and attend the Honey Show there during the week ending Sept. 17, where he will meet Mr. Ivar S. Young, of Norway.

**The Premiums** at the St. Joseph, Mo., Inter-State Exposition, to be held on Sept. 12 to 17, 1887, amount to $267. Mr. J. G. Graham, Agency, Mo., will send any one a premium list who may want it. The editor of the AMERICAN BEE JOURNAL will award the premiums.

**Mr. C. F. Muth,** we are sorry to state, has been very sick for the last month, suffering from the effects of sunstroke which occurred at his farm. He is now on the way to recovery, but still unable to attend to business. Our readers will be very sorry to learn of his illness, and we know will be glad to hear of his complete restoration to health.

**The St. Louis Fair** will open on Oct. 3, and last for 5 days. In the Apiarian Department, premiums are offered amounting to $147, besides diplomas. Premium lists may be obtained of the Secretary, Arthur Uhl, St. Louis, Mo.

**Upward and Onward** go the market quotations for honey. In New York one-pound sections of white-comb honey are quoted at 18 cents (see page 556). The last quotation from that firm was "9 to 12c." (see page 428). This is a jump of 6 cents per pound. If bee-keepers will go slow in selling their honey, it will go up another 6 cents within a few weeks. "A word to the wise is sufficient."

**Several** have requested our opinion of the Self-Inking Rubber Stamp, we have been advertising for Geo. T. Hammond. We have one in daily use, and desire nothing better. It is simply perfect.

**The Bee-Moth.**—On page 555, Mr. Crawley asks concerning the bee-moth, and remarks that they are very plenty. Several other correspondents say that they are very troublesome this season.

Many of the old-fogy sort speak of bees being "run out" by moths! Why not say that the weeds "run out" the corn? When a colony becomes weak (often from queenlessness), the hive will be taken possession of by moths, and then some persons run away with the idea that the bees were destroyed by the bee-moth. From an exchange we copy the following:

The moth is the color of old wood, and the wings cross one another, turning up like the tail of a fowl. It may be seen lurking around hives in the evening, trying to gain admittance. Where fowls have the run of an apiary, they catch many of these moths on the wing. Combs in frames can be kept over the summer free from the depredations of the larvæ of the bee-moth, if they are suspended in the light and air, and are 3 or 4 inches apart. Moths love darkness and uncleanliness, and deposit their eggs in cracks and crevices about hives, where bees cannot gain access to them. Do not permit refuse comb to lie around the apiary or bee-house. I have put frames of combs containing their larvæ into a hive of Italian bees, and in half an hour could see the bees bringing them out. There is no need of any other moth-trap, for they are always baited and set. A handful of Italians will defend a hive.

Mrs. L. Harrison remarks as follows, in the *Prairie Farmer* for last week:

The bee-moth is very busy now. I saw a couple of them this morning on an empty comb, standing by the side of a hive in the open air. They were of the color of old wood, and flew away as I took up the comb. I discovered a hive from which the bees had deserted, and found a few of the combs infested with the grubs of the moth. I stood them outside to let the chickens pick them out: it is the only way I know of for utilizing them. Half of the combs had grubs in them, and the remainder had none; the latter I left in the hive with double the distance between them that they formerly had, and so far they have not been infested. I will look around and find a spider to put with them, which will guard them safely.

**The Australasian** *Bee Journal* is the name of a new monthly published by Hopkins, Hayr & Co., at Auckland, New Zealand, at 6s. ($1.50) a year. It contains 16 pages, and is ably edited by Dr. Isaac Hopkins, author of the "Australasian Bee Manual," an experienced apiarist of New Zealand. Three years ago Mr. Hopkins started a bee-paper there. It lived one year and then ceased to exist. Now, perhaps, the bee-keeping interests of Australasia will be able to support a good periodical. We hope so, and wish the new paper much success.

**California Honey** will not be found this year in the Eastern markets. They have only a very small crop, and the new freight arrangements under the Inter-State law will not permit the California honey to compete, if they had any to send to the Eastern states.

The short crop of honey can now be made advantageous to those *few* who have some to sell. Double the prices of last year should be demanded, and may be obtained a few weeks later. Those who sell early will lose *the chance* for good, fair prices. On the whole, the present short crop may be considered to be "a blessing in disguise." Old fogies will suffer, but the pursuit will be "the gainer."

**Feed the Bees** if they need it. Many colonies are short of stores, where there are no fall flowers to give them nectar to gather. It will pay to feed the bees and thus preserve them for another season. The slip-shod, old-fogy, know-it-all fellows will lose all or nearly all of their bees during the coming winter, and will be practically "out of the business" next spring. This will make a good demand for bees next season, and those who have them for sale will be "in clover."

In many places there are fall flowers, from which the bees are gathering fair quantities of honey; this will "bridge over the gap" and make fall feeding unnecessary. One danger threatens, however, if the rains should be too profuse, the honey may be thin and watery, and will sour in the hives, thereby causing disease and death to the bees in winter.

Use a good feeder—either a Shuck or a Heddon—its use is cleaner and more economical. If such cannot be had, then use an inverted jar or can, with cloth tied over the mouth, put it on the top of the frames, turning back the quilt, so that the bees can get at the food. Here is what Mrs. L. Harrison says about bee-food and open-vessel bee-feeders, in the *Prairie Farmer:*

For winter stores none but the very best grades of sugar should be fed, but during warm weather, when the bees are continually on the wing, cheaper grades will answer the purpose, such as damp New Orleans sugar, which they can use without being made into syrup.

Bees do not sip like flies, and if a bowl of syrup should be given them, it would soon be a withering mass of drowning bees. In order to prevent this, the syrup should be quite thin, and put into a vessel of chopped straw, or have thin muslin tied over it loosely, so it would settle down as fast as the syrup was taken out. It should be tied so that no bees could get under it, as they are very prying insects. This feed should be given them in such a way, that no bees from the outside can gain access to it, or robbing will be induced. Better feed at night, or early in the morning before bees are flying.

**Answering Letters** of no possible interest or advantage to any one but the person sending the question should suggest to such persons the fact that we cannot spend all our time for their individual benefit.

One man writes us to go and get the price of wagon wheels; another wants us to sell a car-load of potatoes, saying that he cannot trust commission men; another wants to know if it will be safe to ship honey to Mr. ——; another wants us to find out if such a firm as —— are doing business on —— street, and asks us to go and examine the goods, and let them know if they can make money by selling them as agents; another wants us to investigate the methods of doing business adopted by Messrs. ——, and advise them whether it would pay for the writer to send them money, etc.

In order to answer these letters satisfactorily, we would have to travel from 6 to 10 miles, lose half a day's time, pay postage to answer each one—for in nine cases out of ten the query comes on a postal card. We are willing to accommodate all we can, but we must reserve some time, to attend to our legitimate business—or go hungry.

**Goldenrods,** asters and Spanish-needles are now blooming, furnishing the bees with sweet nectar.

# QUERIES

**With Replies thereto.**

[It is quite useless to ask for answers to Queries in this Department in less time than one month. They have to wait their turn, be put in type, and sent in about a dozen at a time to each of those who answer them; get them returned, and then find space for them in the JOURNAL. If you are in a "hurry" for replies, do not ask for them to be inserted here.—ED.]

## Management of Excessive Increase.

**Query 462.**—What would you do with increase, natural or artificial (I do not ask how to prevent "swarming"), if bees were slow sale—cheap?—F. K.

Work them for all they are worth.—H. D. CUTTING.

Use every means to prevent increase, and if necessary double up colonies.—J. P. H. BROWN.

Keep the increase, and produce honey; that is what we do, and it pays.—CHAS. DADANT & SON.

Use up the bees pretty well by contracting the brood-nest with a "vengeance;" then either kill the few remaining bees, or unite them.—W. Z HUTCHINSON.

I should prevent it as far as possible, and get honey instead.—A. J. COOK.

Bees may be united in the month of August to any extent desirable.—G. L. TINKER.

Double up colonies near the commencement of the clover bloom in June, in this locality.—G. M. DOOLITTLE.

Keep the increase, if you desire more colonies; but if not, reduce it back by a good, practical method, which is too long to describe in this place. I consider brevity of both questions and answers to constitute the soul and spice of the Query Department.—JAMES HEDDON.

One way is to "double up" in the spring, or perhaps it would be better to take brood from part before the harvest, and build up the others very strong; in other words, make as many colonies as you can extra strong, and let the others be mere nuclei.—C. C. MILLER.

I know of but three things to do with bees, viz: sell or give them away, kill them, or work them for surplus honey. Probably, if the above case was my own, I should keep them till times were better, or sell them by the pound. Bees by the pound are largely called for, and even at half the present prices, would prove a profitable business, unless too far from means of transportation.—J. E. POND.

If honey is to be found, keep the bees busy, in gathering it, by furnishing plenty of room for storing.—THE EDITOR.

## Pure Italians vs. Hybrid Bees.

**Query 463.**—1. Which is considered the best to produce comb honey, pure Italians or a cross of the different races? 2. What cross would be best for producing comb honey, providing a cross of any kind was desirable?—M. S.

Pure Italians.—DADANT & SON.

I prefer the pure Italians.—J. P. H. BROWN.

A cross between Italians and Germans is superior to pure Italians, and is the cross that "I prefer."—W. Z. HUTCHINSON.

The crosses work the best. I am now trying a cross between Syrians and Carniolans. I hope much from it.—A. J. COOK.

I consider a wisely-directed cross between the best strain of Italian and German bees to be vastly superior comb-honey producers.—J. HEDDON.

1. Properly selected cross-bred bees are better than the Italians, to produce comb honey. 2. I prefer the Syrians crossed with Italians and Albinos.—G. L. TINKER.

1. The pure Italians. 2. Cross your Italians with other Italians 500 to 1,000 miles distant, and you will have *the best bee* in the world for either extracted or comb honey.—G. M. DOOLITTLE.

1. The pure Italians, in my own experience. 2. I should prefer an Italian queen crossed with a black drone. My experience, however, has been almost entirely with blacks and Italians.—J. E. POND.

I am experimenting in this line at present for this locality. I am not prepared to give a correct answer, and I do not think this can be answered to the satisfaction of the fraternity at large.—H. D. CUTTING.

I get a "best" imported Italian queen, and then I find that I have crosses enough with the surrounding black bees. It is a good deal like some one said about horse-feed: "The most desirable feed for horses is sawdust and oats, the less sawdust the better."—C. C. MILLER.

I like pure Italians the best, but Italians and the first crosses between the Italians and black bees make a good mixed apiary, and will give as good results as if the apiary contained all pure bees. If my apiary was run for honey alone, I would not go to the labor and expense of keeping my apiary full of pure bees. Breeding-stock must be kept pure, but it is expensive and laborious to keep the working-stock up to the pedigree mark. For a comb-honey apiary I would employ graded working-stock, infusing fresh Italian blood from year to year, to keep my stock from going down.—G. W. DEMAREE.

1. The Italian bees are no doubt the best, all things considered. 2. The only crossing we could recommend would be selecting the most desirable Italians in your own apiary, and then procuring *the best* from a distant apiarist, and them breed. This would be a wise selection.—THE EDITOR.

## When to Extract Honey.

**Query 464.**—An extracting super is before me, filled with comb honey; when shall I extract? Why?—Shiloh.

As soon as you get ready.—J. P. H. BROWN.

When you are ready.—H. D. CUTTING.

1. When you get ready. 2. Because that is the proper thing to do.—G. M. DOOLITTLE.

If it is fit for use as comb honey, do not extract it at all, but sell it as it is. If not, extract it at once, as according to your description the honey must be ripe, and you may need the combs to replace upon the hive.—JAS. HEDDON.

I do not think that honey should be extracted until it is fully ripened. If wanted out of the comb, I know of no reason why it should not then be taken.—G. L. TINKER.

Now, because the weather is warm, and you may stand a chance of getting it filled again this season. Why wait?—W. Z. HUTCHINSON.

As soon as the crop is done. If you extract sooner, you will get some unripe honey, and, on the other hand, there is no use of putting off till to-morrow what you can do to-day.—DADANT & SON.

Extract at the time that best suits your own convenience, but unless you know just how to ripen honey, better let it stay in the hive till it is well ripened.—C. C. MILLER.

As soon as the bees commence to cap the honey; because that saves the time of uncapping, and if kept in a warm, dry room, the honey will be A No. 1, if from the right flowers.—A. J. COOK.

I do not understand this question. As asked, I should say, extract when most convenient, but not till the honey is well ripened.—J. E. POND.

Take the honey out at once; because it will never get better by keeping the "super before you," and the bees ought to have the combs back to fill them again.—G. W. DEMAREE.

If the honey is fully ripe, extract it as soon as possible. 2. Because it should be done while the weather is warm.—THE EDITOR.

## Convention Notices.

**CHANGE OF TIME.**—The officers of the Cedar Valley Bee-Keepers' Association have postponed the time of the next meeting, on account of its clashing with the State bee-keepers' meeting. The meeting of the Cedar Valley Bee-Keepers' Association will be held at Waterloo, Iowa, on Sept. 20 and 21, 1887.

H. E. HUBBARD, *Sec.*, Laporte City, Iowa.

☞ The Iowa Bee-Keepers' Association will meet in the bee-keepers' tent on the State Fair Grounds at DesMoines, Iowa, on Sept. 7, 1887, at 10 a.m., and continue as long as may seem profitable. All are invited. A. J. NORRIS, *Sec.*

**Union Convention at Chicago.**—The North American Bee-Keepers' Society and the Northwestern Bee-Keepers' Society will meet in joint convention in Chicago, Ills., on Wednesday, Thursday and Friday, November 16, 17 and 18, 1887. This date will occur during the *second week* of the Fat Stock Show, when excursion rates will be very low.

# Correspondence.

This mark ⊙ indicates that the apiarist is located near the center of the State named; ♂ north of the center; ♀ south; ♁ east; ☽ west; and this ♂ northeast; ☾ northwest; ♁ southeast; and ♀ southwest of the center of the State mentioned.

Official Report to U. S. Entomologist.

## Trembling Bees—Foul Brood.

N. W. M'LAIN.

### THE "QUAKING DISEASE."

When bees are unable to obtain from ordinary sources a supply of saline and alkaline aliment, indispensable to their health and vigor and to the normal performance of their functions, they seek a supply from any available source. At such times they throng upon the milk-weed and mullein, which exude a salty sap. At such times large numbers of dead bees may be found at the foot of the mullein stalks, and thousands perish in the fields, and thousands more which reach their hives, being low in vitality and unable to free themselves from the meshes of the silken fiber in which legs and wings are bound, die in the hive or crawl forth to perish. The action of these starved and weakened bees when attempting to rise and fly or to rid themselves from the mesh of silky web, causes a peculiar nervous motion, and this is one manifestation of that which is called the "quaking disease," or the "nameless disease." If examined with a microscope, many are found entangled with the filaments from the plants, and their stomachs are entirely empty.

The honey from hives containing colonies so affected has a peculiar and very disagreeable taste and odor, somewhat like that of fermented honey indicating that some constituent essential in conserving it was lacking, and the cell-caps are dark, smooth, and greasy in appearance, and an offensive odor is emitted from the hive. An analysis of honey taken from such colonies, made by the Chemist of the Department, fails to reveal what element is lacking.

I have treated a number of apiaries so affected, using an application of strong brine, to which was added soda sufficient to make the alkaline taste faintly discernible. The hive should be opened, and each frame should be thoroughly dampened with spray from an atomizer, or the warm brine may be applied by using a sprinkler with very small holes in the rose, care being taken to use only enough to thoroughly dampen the bees and combs. The alighting-boards also should be thoroughly wet. The treatment should be applied morning and evening until the disorder disappears, which is usually in three or four days; a decided improvement being usually noticeable in twenty-four hours. The honey should be extracted and diluted by adding the brine, and, after being nearly heated to the boiling-point for ten minutes, may be safely fed to bees. The apiaries were last winter supplied with this food alone. Both wintered well. Vessels containing brine should always be kept in or near the apiary. Pieces of burnt bone or rotten wood should be kept in the vessels of brine, and these vessels should be protected from the rain.

Another form of the so-called "quaking disease" appears to result frem hereditary causes; for, if the queen be removed from the colony in which the disorder prevails, and a young, vigorous queen be substituted, in due time the disorder disappears. In very rare instances bees also gather poisonous nectar from plants, such as fox-glove or digitalis, the eating of which, it is reported, results in paralysis, another manifestation of the so-called "nameless disease."

### THE FOUL BROOD DISEASE.

One of the most malignant diseases incident to bees is called the "foul brood" disease. What pleuro-pneumonia and hog-cholera are to the dairyman and swine-breeder, foul brood is to the apiarist. This disease is so stealthy and so virulent and so widely distributed, no locality in the United States being assured of immunity, that much apprehension is felt, and some of the States have enacted laws having for their object its control and extirpation. In many States the ravages of this scourge have resulted in ruinous losses to bee-keepers, and many on this account have been deterred from engaging in this profitable branch of husbandry.

During the past year I have given much attention to the study of this disease and the experiments for its prevention and cure. In making my investigations and experiments concerning the origin and nature of this disease and the means of its prevention and cure, I have collected a great amount of information from my own experience, and from the experience of many others. Concerning the origin of this disease and its means of communication, the evidence obtained is somewhat conflicting.

That the disease is actually contagious appears certain. That it is always communicated through the commonly accredited agencies is uncertain. That the disease is persistent and usually reproduces itself whenever the germs find the proper conditions for development is verified by experience. That the germs of this disease may be carried on the clothing of the apiarist and in and upon the bodies of bees from one apiary to another, and that they be borne by the wind from one hive to another in the same apiary, and that the disease-germs may be liberated from the decomposing bodies of other insects and scattered over other objects with which the bees come in contact, seem probable.

That the disease is destructive to bees as well as brood; that live pollen is the medium through which the contagion is most commonly and most rapidly spread; and that the disease yields readily to treatment which is simple, cheap, and easily applied, appear to be true, in support of which I submit the following detailed account of my experiments and observations:

On June 1, an apiarist having over 200 colonies in his apiary reported to me that he had discovered two cases of malignant foul-brood, and that unmistakable evidences of its presence were apparent in 25 other colonies. As I knew this man was without experience with this disease, I could not hope that he was mistaken. I knew that he had had unenviable opportunities, having been a bee-keeper for many years where this disease had been prevalent, and two years ago he himself had consigned 148 colonies to the flames as incurable. I at once gave him the following formula for a remedy:

To 3 pints of soft water add 1 pint of dairy salt. Use an earthen vessel. Raise the temperature to 90° F. Stir till the salt is thoroughly dissolved. Add 1 pint of soft water boiling hot, in which has been dissolved 4 table-spoonfuls bicarbonate of soda. Stir thoroughly while adding to the mixture sufficient honey or syrup to make it quite sweet, but not enough to perceptibly thicken. To ¼ of an ounce of pure salicylic acid (the crystal) add alcohol sufficient to thoroughly cut it (about 1 ounce), and add this to the mixture while still warm, and when thoroughly stirred leave standing for 2 or 3 hours, when it becomes settled and clear.

*Treatment.*—Shake the bees from the combs and extract the honey as clearly as possible. Then thoroughly atomize the combs, blowing a spray of the mixture over and into the cells, using a large atomizer throwing a copious spray; then return the combs to the bees. Combs having considerable quantities of pollen should be melted into wax and the refuse burned. If there is no honey to be obtained in the fields, feed syrup or the honey which has just been extracted. If syrup is used, add 1 ounce of the remedy to each quart of the syrup fed. If the honey is used, add 2½ ounces of the remedy to each quart of honey fed. The honey and syrup should be fed warm and the remedy thoroughly stirred in, and no more should be furnished than is consumed.

Give all the colonies in the apiary one copious application for the remedy, simply setting the frames apart so that they may be freely exposed to the spray. This treatment frequently reveals the presence of disease where it was not before possible to detect it. The quantity prescribed, applied by means of a large atomizer, is sufficient to treat 150 colonies. Continue the treatment by thoroughly and copiously spraying the diseased colonies at intervals of three days, simply setting the frames apart so as to direct the spray entirely over the combs and bees. In order to keep the bees from bringing in fresh pollen, burn old dry bones to an ash and pulverize in a mortar and sift through a fine wire-

cloth sieve, and make a mixture of rye-flour and bone-flour, using three parts of rye-flour and one of bone-flour, adding enough of the syrup or medicated honey to make a thick paste. Spread this paste over part of one side of a disinfected comb, pressing it into the cells with a stiff brush or a thin honey-knife, and hang this in the hive next to the brood. Continue this treatment until a cure is effected. Keep sweetened brine at all times accessible to the bees, and continue the use of the rye and bone flour paste while the colonies are recuperating.

As a preventive apply the remedy in the form of a spray over the tops of the frames once every week until the disease has disappeared from the apiary.

On June 20, the apiarist above referred to, reported as follows:

"Number of colonies in the apiary on June 1, 210. Number of colonies apparently diseased, 25. Treatment applied as directed to the whole apiary. Number of colonies actually diseased, 64. The disease present in all stages of progress; in some cases just appearing, in some well developed; in others the contents of the hives were a black mass, the brood-combs nearly rotten, not an egg to be seen, and every cell of brood dead, and the stench from the hives nauseating. Have given the diseased colonies three applications, the first time extracting the honey. Effect of treatment instantaneous even upon apparently hopeless cases. Every colony save 5 is entirely free from any trace of disease, and these 5 are responding to treatment rapidly. I examined a colony to-day which two weeks ago had combs of brood almost rotten. No trace of the disease remains. I had 4,000 frames of extra comb. After hiving a few swarms, on some of them I found the disease present in every case. I then melted every one of these extra combs into wax, cleared and scalded and disinfected every hive, and hived the swarms on frames filled with comb-foundation. One of my neighbors, having an apiary of 60 colonies, had 38 cases of foul-brood, and before I was aware of it he had burned up a number of them. The remainder we treated as directed. His yard is now entirely free from disease. The cost of the remedy was just 10 cents. This prescription, if thoroughly applied according to your directions, will speedily and affectually cure the most hopeless and forlorn case of foul-brood."

It was afterwards found that the melting of the combs and scalding of the hives was not necessary.

After requesting this same apiarist to make some further tests, the nature of which will appear from what follows, on August 1 he made the following report:

"In 5 of my best colonies, which had shown no symptoms of disease, I placed frames of brood from diseased colonies, treating them as I did the diseased colonies, and all evidences of disease speedily disappeared. To 1 colony from which the bees had swarmed out, leaving less than half a pint of bees between the black, rotten combs and not an egg in the hive and every cell of uncapped brood dead, and not more than one bee hatching to every square inch of brood, after thoroughly applying the remedy I introduced a queen just crawling from the cell. To-day I take pleasure in exhibiting this colony as one of the finest I own, lacking only a sufficient store of honey, and this without the addition to the odorous hive and rotten combs of a single bee, cell, or brood, or anything whatever to assist except the young queen.

"I extracted the honey from diseased colonies and treated the combs of such with the remedy as directed, and then exchanged hives and combs, giving the infested hives and combs to the healthy bees without cleansing or disinfecting a hive, and the diseased bees were given the hive and combs lately occupied by the healthy colonies. The contagion did not spread, and after two or three applications of the remedy all traces of it disappeared. I fed back the honey extracted from the diseased colonies for the bees to use in breeding, adding 2½ ounces of the remedy to each quart; and I also fed the mixture of bone-ash, rye-flour, and honey as a substitute for pollen by pressing the paste into the cells on one side of a comb, and this I placed next to the brood in each hive. I would not advise any one to feed this bone-flour and rye-flour paste unless they wish to rear a great many bees. I also fed the salt, alkali and acid mixture outside in the apiary, so that all the colonies could help themselves. No; I do not fear that any of the mixture will be stored for winter to get into the surplus apartment, as the bees seem determined to use all they can get of it in brood-rearing. All my hives are running over with bees ready for the fall honey harvest.

"As requested, I placed frames of sealed honey from diseased colonies in healthy colonies, and the disease was not communicated; but the frames from which the honey had been extracted, such as contained pollen, uniformly carried with them the contagion, unless the combs were first thoroughly sprayed with the antidote. and colonies gathering no pollen, or but little pollen, recovered much sooner than those gathering pollen in considerable quantities—that is to say, the more pollen, the more treatment required.

"In reply to your question asking by what means and in what manner the disease was communicated to my apiary, I answer: I at first thought that it had originated spontaneously, but later and more careful inquiry leads me to believe that I introduced it into my apiary through my own carelessness. But I and my neighbor (to whom reference was made in a former report) spent a day in some apiaries some distance from home in which the disease was raging. It would seem true that we brought the contagion home in our clothing. Other apiarists in our county who kept away from the contagion had no trouble. As to the progress of the disease in individual colonies, I would say that three or four weeks from the time the first cells of diseased brood are noticeable is sufficient to complete the ruin beyond redemption. I am surprised to hear that in some localities a colony may be affected for three or four months before ruin is complete. I have succeeded in rearing some queens from one of these diseased colonies, treated with the remedy without removing the comb-frames, and I will give them every possible chance to reproduce and propagate the disease. I have no fears of a return of the disease where the treatment has been thorough."

2. Number of colonies in the apiary, 14. Every colony nearly ruined by the disease in most malignant form. This apiary is located on the same ground where 145 colonies perished last year from the same cause. The whole yard had been swept clean, everything had been burned up, and entirely new stock procured. Twelve colonies in this apiary were treated by copious and thorough applications of the remedy, simply by setting the frames apart in the hives so that the spray could be directed over both sides. The frames containing brood were not removed from the hive, neither was the honey extracted. The treatment was applied every three or four days, and in three weeks the colonies were free from all appearance of disease. The other two colonies were treated with what is known as "the coffee cure," finely ground coffee being used as an antiseptic. The coffee failed to furnish any relief. Being dusted over and into the cells, it killed the little remaining unsealed brood. The salt, alkali, and acid remedy being applied, these 2 colonies also rallied, and "everything is all right now," was the last report.

3. Number of colonies, 100. Number apparently diseased, 48. A number of colonies had already been burned when the disease was reported. The remedy was thoroughly applied as directed, and in fifteen days the contagion had disappeared.

All the evidence so far obtained seems to prove that pollen is the medium through which the contagion is commonly introduced into the hive, and by which it is communicated to both bees and brood.

The bacteria, "the disease germs," having been lately deposited on the pollen (from what source is not positively known, but probably from the decomposing bodies of other insects) before the organisms are washed from the blossoms by the heat of the Sun, as they lie exposed to his rays without any element essential to their culture and growth, are carried and stored with the pollen in the cell, or pass into the digestive system along with the live pollen taken by the bees for their own nourishment. By this means these agents of destruction are introduced into the organism of the bees, and through the same medium are they introduced into the cells of the uncapped larvæ. The bacteria, having found a lodgment in the organism of the bee, may or may not

cause speedy death. If the bees are young and vigorous they may resist the ravages of the infection, yielding only after the organism is riddled with the bacteria, but if the bees are old and low in vitality, the infection, if left to itself, brings speedy ruin. In the spring of the year I have dissected bees which had passed the winter in a colony in which this disease was present when the bees were put away in winter quarters the fall before. Their bodies had been completely honey-combed by bacteria.

The fact that if a diseased colony is removed from the infested combs and hive, and placed in an empty hive or in a hive with frames supplied with comb foundation, even if the new hive be at once placed on the old location and the old hive and infested combs be burned and the bees at once liberated, the disease commonly disappears, seems also to furnish additional proof that the contagion is usually carried into the hive in the pollen, and, further, that the "disease germs" do not long retain their virility if exposed to the rain and rays of the sun; otherwise the bees would continue to carry in the infection. The bees being compelled to consume the contents of their honey-sacs in building new combs, none of the germs remain to be regurgitated in the new cells; but by this practice the bees are left to the tender mercies of the bacteria, unless they be treated with an antidote. For obvious reasons the queens in such colonies should in any event be superseded as soon as possible. This method of treatment also contemplates the destruction or renovation of all hives and frames, the destruction of all brood, and the melting of all combs; a large percentage of the capital in honey-producing.

Another reason for believing that, except in rare cases, the disease is introduced by pollen is found in the fact that the larvæ rarely ever exhibit any symptoms of disease until about the time when the process of weaning begins, at which time the character of the food is changed from the glandular secretion, the pap, to the partially digested and undigested food. Live pollen is then added to the larval food, and with the bacteria in greater or less numbers; growth is arrested; death ensues; putrefication follows, and the soft pulp, of a grayish-brown color, settles to the lower side of the cell. As the mass dries up it becomes glutinous and stringy and reddish-brown in color and emits an offensive odor. Some of the larvæ will be partially capped, some completely capped and some left uncapped, the condition in which the brood is left depending, I believe, upon the virulence with which the disease attacks both bees and brood. The remedies prescribed appear to destroy the bacteria and cure the bees of the contagion and restore them to natural vigor. The worker bees then cleanse the hive of dead bees and brood and clean out and renovate the cells, and the colony resumes its normal condition.

That the contagion may sometimes be borne from hive to hive by the wind appears to be true, as it was observed in one of the apiaries which I treated for this disease during the past summer, that of a large number of diseased colonies in the apiary, with the exception of two colonies, all were located to the northeast of the colony in which the disease first appeared. The prevailing wind had been from the southwest.

That the disease-germs may be carried upon the clothing and hands appears probable, from the fact that in one neighborhood the disease appeared in only two apiaries, the owners of which had spent some time working among diseased colonies at some distance from home, while other apiarists in that locality who had kept away from the contagion had no trouble from foul-brood.

Aurora, Ill., Dec. 31, 1886.

For the American Bee Journal.

## "Honey" vs. Extracted Honey.

MISS DEMA BENNETT.

The editor seems to be in favor of using the word "honey" in place of "extracted honey," so as "to have something that is entirely correct, and would not have to be explained." While I concede the first point, I cannot the last, for of all the words mentioned so far, I think that the word "honey" as applied to honey out of the comb, would require more explanation than any of the others.

Taking the BEE JOURNAL of Aug. 10, to illustrate, in the index we find "Basswood honey," "Honey and beeswax market," "Honey crop and prices," "Labels for honey," "No honey" and "Very little honey." On page 499, Mr. S. F. Newman writes that the honey crop is almost an entire failure; and the editor says: "Do not sell any honey until the end of September, etc." On page 503, Charles Walker writes of "paying taxes on bees, and no honey to do it with." On page 505, A. F. Stauffer says, "The surplus honey crop this season will be very short." On page 507, H. J. Rogers says, "I shall hold what honey I have for an advance." On page 510, in the advertisements, we see "Bees and honey," by Thomas G. Newman; How to produce the most honey in its best and most attractive condition." In all of the foregoing instances I do not think that the most expert honey-producer could tell whether it were intended to speak of either comb or extracted, namely, *combless* honey, or of both.

As I understand it, "honey" is a general term for the sweet fluid of the flowers which has been gathered by the bees, no matter whether ripe or unripe, liquid or granulated, comb or combless. The same as sugar is the name of crystallized sweets, as maple, cane, sorghum, beet, grape, etc.; or wheat, for the entire crop of that cereal, be it red or white, bald or bearded, spring or winter wheat.

You ask a groceryman if he keeps sugar for sale; he would say, "Yes, what kind do you wish?" If you asked for honey, he would answer in the same manner. I do not believe that there is a single apiarist or groceryman in the United States that would feel right to fill an order for "honey," with *extracted* honey, without inquiry, unless there had been previous dealings with the customer, and the manner of using the term explained.

Mr. J. B. Hains, of this place, who has seven different apiaries, tells me that out of seven different persons who called yesterday for honey, one asked for extracted, and the other six simply asked for honey, when wanting comb-honey.

I think a large majority of people use the word honey as applied to comb-honey.

I have often noticed persons passing by cases of honey in sections (in groceries), say: "How nice that honey looks; I must have some." But if it were jars of extracted, they would always put the descriptive prefix, as "extracted" or "strained," before the word honey.

It is easier to learn entirely new forms of speech, than to unlearn old ones, and substitute others in their places.

While nothing can be urged against the use of the word as the editor proposes, on the ground of incorrect language, still it can but be inexpedient to try and change the custom of ages.

Over 3,000 years ago Samson took *honey* in his hands, and went on eating and came to his father and mother, and he gave them and they did eat. Who doubts that it was comb-honey?

Bedford, O.

[Our correspondent labors under the impression that we have proposed a change of name for extracted honey. We have done nothing of the sort. We have simply said that if we must have a change, it should be an improvement and not merely a change. The whole matter is now referred to the Convention this fall, at Chicago—till then let it rest.—ED.]

Literary World.

## Bees and Bee-Keeping in Poetry.

S. V. COLE.

Of the little folk of nature the bees are among the most interesting. They shine not only in the field of flowers, but in the field of letters. They supply the husbandman with food and the poet with simile and metaphor. This was especially true of the ancient poets. The Muse, in coming hither from the Golden Age of Saturn, started like the linden in Tennyson's "Amphion,"

> With all her bees behind her.

If we ask what has made the bees so interesting, we find, among other causes, that they are creatures with whom order seems to be the first law. The sluggard may go to the ant for lessons in the arts of perseverance,

but his education is not complete until he has graduated from the bee in the science of method, economy, and the duties of a good citizen.

A bee makes wise plans and works for the common weal of the nation. And whatsoever it findeth to do it doeth with its might. Even when it uses its sting it puts its whole soul into it; for it is soldier as well as citizen. This double character has led the poets to compare the bee community to a state, in which every member has its special duty. But in this comparison the bees have the advantage. Our systems are the imperfect development of ages, whereas the bees received theirs perfect in the beginning; so that Virgil says they pass their lives beneath "unchangeable laws." Shakespeare calls them

> Creatures that, by a rule in nature, teach
> The art of order to a peopled kingdom.

Virgil has sung of the bees in fuller strains than any other poet, and has interwoven fact, theory, and legend in a most charming manner. The fourth book of the Georgics, the most perfect of his poems, is devoted to this theme. Here occurs the story of the shepherd Aristæus, who lost his bees and complained to his goddess-mother "in her chamber in the river-depth." She directs him to Proteus, the seer, from whom he learns the secret of replenishing his hives.

In Virgil, the bees are magnified types of humanity, just as the gods are magnified ones; and they go about their business therefore after the manner of men:

> Some seek supply of food
> And by agreement labor in the fields;
> Some in their narrow homes do lay the tear
> Of the narcissus and gluey gum
> From bark of trees, to be their hive's foundations.

The contrast between the aged and sedate bees and their more vigorous companions is very curious:

> The aged guard the towns, and build the combs,
> And mould the curious houses; 'tis their charge.
> But late at night the younger ones return
> Wing-weary home, their legs thick-smeared with thyme.

But more curious from a scientific point of view is the statement that bees do not bring forth their offspring, but gather them in their mouths from leaves and sweet plants, and in this way provide the "tiny freemen of their Rome." One observes that the Latin poet does not forget in his figures to bring the bee-commonwealth under Roman laws and customs. In another place he speaks of their "setting out on their airy march and pulling up the standards of the camp." Indeed, the Roman bees are very soldierly in their bearing, though not more so, perhaps, than their English relatives. As, in Shakespeare, some;

> like soldiers, armed in their stings,
> Make boot upon the summer's velvet buds,

so in Virgil,

> Some stand like sentinels before the gates.

At times the whole nation is aroused by an unfriendly challenge. Then it is they show themselves true Romans. Their hearts "throb with the spirit of war," says Virgil. A sound is heard "that mimics the fitful blasts of trumpets." The excited bees "flash their wings," "whet the points of their beaks," throng around the chief's pavilion, and—*marabile dictu!*—"with loud shouts defy the enemy!" Then comes the conflict, in which

> The leaders, midmost of the battle lines,
> Conspicuous for their wings exhibit how
> A mighty soul works in a narrow breast.

The analogy between bees and men is seldom carried more dangerously near the verge of the ridiculous than when a bee dies and the survivors bear out the lifeless corpse

> And form the mournful funeral train.

Time has somewhat dimmed this picture, but with its suggestion of the busts of dead ancestors and bygone accompaniments of a funeral, it must have been somewhat vivid in its day.

The intelligence of bees and other moral insects is greatly overrated, both by moralists and poets. As between bees and ants, the latter have quite as good a claim to our respect, if we may accept the conclusion of an eminent English authority, that they appear to possess some means of imparting information to one another—a sort of ant-language; whereas their honey-making rivals work more by a "rule in nature." Nevertheless bees are more poetical in their associations, and Virgil has invoked in their behalf his Lucretian pantheism, introducing it, however, with a cautious "they say." According to this doctrine, the fiery souls which animate their little bodies are emanations from the All-Soul which pervades and sustains the framework of the universe, and consequently a bee's history does not end with its funeral. Its immortal part, like the immortal part of a man, is re-absorbed into the original fountain, "and so there is no room for death," says Virgil, "but each flies up into the place of a star."

Bees, along with ants, birds, leaves, and hailstones, furnish the ancient poets with convenient similes where number was involved. Homer compares the Greeks gathering for battle to "swarms of closely-thronging bees, always issuing in fresh numbers from the hollow rock." Æneas, looking down on Carthage from a distance, saw the people at work on the new buildings like so many bees in summer. And Milton, whose mind was filled with classic forms, makes Satan's minions swarm to the council at Pandemonium,

> As bees
> In the springtime, when the sun with Taurus rides,
> Pour forth their populous youth about the hive
> In clusters.

In American poetry Emerson's "Humblebee" and Whittier's "Telling the Bees" are unlike anything the ancient Muse produced, and differ widely from each other, both in style and sentiment. The former contains the thoughts which arise in the mind of a philosopher as he calmly contemplates the

> Sailor of the atmosphere

making his tiny voyage from flower to flower; while the latter is a simple and very effective appeal to the affections. Mr. Whittier's poem is founded on the curious custom, introduced from England and said to have prevailed to some extent in the rural districts of our own country, of informing the bees, in the event of a death in the family, and draping the hives in black. This was supposed to be necessary to prevent the bees from flying away in search of a new home:

> Under the garden wall,
> Forward and back,
> Went drearily singing the chore-girl small,
> Draping each hive with a shred of black.
>
> . . . . . .
>
> And the song she was singing ever since
> In my ear sounds on:
> "Stay at home, pretty bees, fly not hence?
> Mistress Mary is dead and gone!"

As good order is so strikingly exhibited in "the government of the bees, for the bees, and by the bees," it seems appropriate that in Egyptian hieroglyphics the bee should represent royalty, and, in later times, become the symbol of the French Empire. In France the royal mantle and standard were thickly sown with golden bees, and in the tomb of Childeric, in 1653, there were discovered three hundred bees, made from the same precious metal.

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For the American Bee Journal.

## Separators—Fastening Foundation.

C. THEILMANN.

Mr. Dibbern takes me to task on page 265, because I have not as yet progressed so far as to use separators between sections, in order to obtain straight combs. I admit that I have never as yet used any separators for that purpose, but I have made many experiments to get straight and true combs built in the sections, without the use of objectionable machinery to the bees, and have for a number of years accomplished the desired results almost to perfection. Even with the small crop of basswood honey this year (I did not get any clover), my sections of honey are all built straight. It would have been a pleasing sight to any bee-keeper, to see about one hundred section-cases stored in my honey-house with all perfectly straight combs built in them—at least they were as straight as need be for any purpose; if 8 or more of these cases were piled on top of each other, the bee-spaces between the combs could be seen clear through the whole of them, if light was admitted in the lower one, and I doubt very much if Mr. D. could tell the difference between those which contained combs from last year, or those with new sections and new foundation, as I could not do so myself, and be sure of it. My cases are all one size, and hold 24 sections 4¼x4¼ by 2 inches, or 28 sections, 7 to the foot.

Arriving at this point of perfection, I would hardly know what to do with separators—in fact I would not thank a man for a load of them, for my own use. I know that this will not agree with some of our best authorities and practical bee-masters, but we must take into consideration that they have their bees in different hives and man-

age them in a different way from which I and some others do. It will not pay to throw aside hives and fixtures after once adopted, and get others which are no better; it is not the *hives* that make the honey.

There is Mr. Doolittle, one of our most practical apiarists, who cannot get along very well without separators. The readers will ask, why is that? Well, so far as known by reading, Mr. D. practices side-storing and therefore he cannot get along without them, else he would have a "nice mess" in his sections, and I have my doubts but what it will be a little mixed sometimes anyway, that is, pollen and honey.

I am mainly speaking to those who obtain their honey above the brood-nest; side-storing, or between the brood-nest will be most surely to have pollen in it; this is one part of bee-nature which we cannot prevent, therefore the proper place for nice surplus comb-honey is above the brood-nest, and to get it there in the best possible shape, and all of it that the bees can spare, without the use of a lot of machinery, has been my restless study. I have accomplished the securing of straight combs, and I have no trouble in getting my bees to work in the sections if they have anything to put there; on an average they do not store more honey in the brood-nest for winter and spring use, but I have to equalize it for them in the fall, which is not a very big job, as every frame fits every hive that I have, and as a rule the majority generally need no fitting.

FASTENING FOUNDATION IN SECTIONS

For the benefit of the readers, I will give my method of securing straight combs in the sections. In the first place I am very particular to do things right and at the right time, and if the readers take patience to read the following carefully, it will probably benefit them:

After having the cases ready and the sections folded, I put them near on an old cook-stove, which is under a shed—the sides are all open but one; near this stove I place an old kitchen-table, on which there are marks made by the "square" and pencil, whereby I cut the foundation, 6 to 8 sheets at a time, into the desired pieces for the sections. I prefer the Dadant "extra thin" foundation, 3¾x8½ inch sheets, for 4¼x4¼ sections, and 6 pieces out of each sheet. When I have the foundation ready I place another little table on a box or top of a hive, about 15 inches high and 18 inches long; on this I nail two thin strips to hold the sections in position while putting in the foundation. They are a little thinner than the sections and far enough apart to slip the section in between, and four at a time. This top table is to make it convenient to operate. The empty cases are placed on one side and the folded sections on the other side of the table, and the foundation in front. The stove is heated to the right point, and a protection-board placed between the stove and myself.

I stand between the table and board, and use a half-worn-out smooth table-knife, lay it on the hot stove, while at the same time I pick up a piece of foundation with the other hand, and hold it inside of the upside-down section on the little table, right above the hot knife, which is rubbing the wood below it, to get it hot, while at the same time is melting the end of the foundation so as to seal it to the wood, which is done by pressing it slightly in the center of the section; if rightly done, it will leave a mark of wax for every cell on the wood on each side of foundation alike, and this is just the point, as it will guide the bees to build the comb on each side alike, in all sections, and therefore build straight combs.

Do not overlook the main points, namely: the wood has to be fairly hot to receive the melting wax, else it will not stick securely; a thin knife is better than a thick or new one, as it becomes hot enough in one second, if the heat is right; it also works better on the foundation. There should be a space left between the foundation and sides of the sections of at least 1/8 of an inch, so that the foundation will hang free when in position. If it is too close, the bees will stick it to the sides and cause it to warp. To touch it with the hot knife will melt it to the desired distance, if it be too close.

I have tried a number of different foundation fasteners, but none suit me as well as the knife; it is utterly impossible to do as perfect work with them as I can with the knife; they all leave a strip of foundation on one side only, on which the bees get ahead the fastest nearly every time, and the result is bulged combs, and separators are surely needful.

I fill the cases as I go, and when a colony is ready (not before) I put one above the brood-nest with nothing between the frames and sections except a bee-space, but the hive should stand level from side to side. I can put in foundation best and quickest when the temperature is 70° to 80° above zero in the shed; at 60° the material is too cool, and at 90° to 95° the foundation gets too limber and crooks up, which means bad combs, and some of them will loosen because the foundation cannot be pressed close enough to the wood.

Heretofore, I was almost influenced by reading, to get some perforated honey-boards, but as long as my queens stay out of the sections as well as they have in the past, I will be better off without them, as they rarely deposit any eggs there, and everything that hinders the bees from free passage they do not fancy; the closer they are to the brood-nest, the better they like to store honey in the sections; but sections "between" or on the "side" of it, are very apt to get pollen in them.

Much has been said about bees traveling over finished sections, and thus damaging them; this is surely a great mistake; and one writer will say what another has written before him, without any investigation or knowledge of his own. My experience is that honey becomes better in every respect for quite a while after it is sealed over, even if it does get a little yellow by the bees nibbling on it with their mandibles; but not with their feet traveling on it.

Theilmanton, Minn.

For the American Bee Journal.

## Causes of Drouth—Tile-Draining.

J. C. ARMSTRONG.

The article by Thos. E. Hill, on page 487, calls up a question on which there is a diversity of opinion. The article in a great measure, answers itself, when it says: "The fogs and moisture through these winds are driven upon the continent where drouth seldom prevails, etc." The ocean is the great reservoir which supplies the continents with moisture. This moisture as it is wafted upon the continents is carried to our mountain summits, where it is condensed, and falls in rain or snow. From there our vast rivers are formed which in turn form our great lakes. All these waters find their way to the ocean again and again, as they are thus wafted.

There are not many places on the earth's surface, which have not moisture enough in the atmosphere for vegetation, if it can only be condensed into rain. There are a few "rainless regions," which are rendered so by local causes, but these are few. At present all our sloughs and ponds are dried up. The beds of our smaller streams are dry, and our larger ones are greatly diminished. If these are the source of our water supply, we are done. The whole Mississippi valley will soon be a barren waste, and the whole continent as well. In a few months we shall see the ground saturated with water; our streams overflowing, and our rivers sweeping on in vast floods to the ocean. Where do all these waters come from? From the ocean. As a general rule there is a greater rainfall near the ocean than in the interior of the continent. For the same reason there is more along our great rivers and lakes. Yet nearly all these regions are visited by drouths.

At the present time, Michigan is suffering as severely as Iowa, though surrounded by the great lakes. Minnesota is all dotted over with lakes, yet the drouth is there. I have seen as great drouth nearly 40 years ago in the vicinity of Lake Erie, when perhaps there was not a tile in America. Undoubtedly all our little streams, lakelets and sloughs have some influence in producing rain, but they are as a drop in the bucket, compared with the great ocean. Perhaps they are a hundred-fold more potent in breeding malaria, than in producing rain.

It is a well-known fact to all who have studied the effects and had the experience with under-drainage, that such land is better prepared to stand a protracted drouth than land not so drained. While it carries off all sur-

plus water which would be injurious to plant growth, it pulverizes the soil and renders it more porous, thus increasing its capacity to absorb moisture in the form of dews. Moisture is drawn up from the wet soil below the drain, by the same force that water is drawn to wet a whole sponge when only a part of it is dipped in water.

Another reason why an under-drained soil can stand drouth better is the fact, that the surface water being removed, the roots run deeper into the earth where more permanent moisture exists. When the surface soil is saturated with water, the roots of plants creep along the surface, finding all the moisture there they need. As dry weather comes on, the surface moisture is evaporated, the surface becomes baked, and vegetation withers and dies.

We have had a practical illustration of this principle in this section during the last two years. We are in our second season of drouth in this region. When we planted our corn last year, the ground was wet, and it remained so for some considerable time, till it had made considerable growth. As the season advanced, the ground dried out and the roots were left in dry ground, and the crop wilted and made a very feeble growth, and we did not have half a crop. This season it was different. The ground was dry when it was planted. Many predicted that if we had another dry season we would not have any corn. We have had our second season of drouth and our corn, on an average, I believe, is fifty per cent better than last year.

As to under-drainage being the cause of greater floods than formerly, is a mooted question. The evidence of early settlers goes to show that floods were as great in early days as now. In early days, when the river bottoms were covered with timber, and the streams and water-courses were filled with rubbish, the effect was to retard the outflow of water, the streams were longer in rising, and floods were of longer duration. As the forests were cleared away and the country was brought under cultivation, the rubbish in streams was cleared away; outlets for the surplus water were formed by open ditches by which the outflow of water was hastened. The effect has been to produce a quicker rise in creeks and rivers, and higher flood-marks.

If all level and table lands were tile-drained to the depth of three feet or more, the soil to that depth, would soon be rendered open and porous and would require a heavy rain to saturate the soil to that depth, before it would begin to give off excess of water to the drain; and the water of saturation would be given off gradually. The effect of tile-draining, therefore, is to hold back the water rather than precipitate it at once into open channels. Open ditches and small streams which have been cleaned of logo-brush and leaves, allowing the water to run off without any hindrance, increase the height of floods. Not so with tile-drains.

It is an indisputable fact that storms and cyclones are more numerous and more severe than formerly; but it is not so apparent that they are produced by drouth, or that drouth and cyclones go together. Some ascribe them to one cause, and some to another. Some ascribe them to electrical disturbances, caused by railroad tracks and telegraph wires; others ascribe them to planetary influences. Perhaps we shall never know their causes. Until it can be shown beyond a reasonable doubt that tile-draining is the cause of drouths and cyclones, I think it would not be wise to discontinue a work which produces such bountiful returns for the money invested.

Bromley, ⊙ Iowa.

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For the American Bee Journal.

## N. W. Ill. and S. W. Wis. Convention.

The Northwestern Illinois and Southwestern Wisconsin Bee-Keepers' Association met for their fall meeting at the residence of O. J. Cummings, in Guilford, Ill., on Aug. 18, 1887; President Highbarger in the chair, and about 20 members present.

There was about 65 lbs. of surplus honey reported, but the main question was, what, how and when to feed bees for winter.

Mr. Morse said that he should feed in the ratio of 10 lbs. of sugar to 3 lbs. of water, and one heaping tea-spoonful of tartaric acid.

Mr. Highbarger said that his feed would be 6 parts of sugar and 1 part of water and extracted honey; that he should use cigar boxes for feeders, cutting the cover so as to be ½ inch small in the inside of the box, and cut through it, using the cover to float on the feed, so that the bees could take the feed and not get into it. He would place these boxes on the frames at night.

Mr. Taylor exhibited a feeder to cover the whole top of an 8-frame hive.

Some of our best bee-keepers were appointed to read essays at the annual meeting next January, and preparations were made to make the annual meeting the best we have ever had. The Association tendered a vote of thanks to Mr. and Mrs. Cummings, for their kindness and hospitality.

D. A. FULLER, *Sec.*

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For the American Bee Journal.

## The Season in Massachusetts, etc.

ALLEN LATHAM.

The season here is as everywhere else, poor. I have not one decent box of honey; to be sure I have several hundred partly filled, but not in a salable condition. We are now having heavy rains, and if we have suitable weather in September, asters and goldenrod, etc., will bear lots of honey.

Clover yielded honey for about two weeks, and since then bees have barely gotten enough honey for breeding. But they have swarmed—swarmed where there was no honey to be gathered. Swarms that I hived in June are now swarming. I lay it to hot weather, and having nothing to do. Unless we do have honey later, bees here will have to be fed, and all bees that have gone to the woods will starve. I hope for better luck next season.

EXTRACTED HONEY.

In respect to the discussion on "extracted honey," I would say, why carry it on any further? Does the English language furnish a better word than "extracted?" I think not. That word expresses the right meaning. What if one or two unobserving people get the idea that it means "extract of honey?" It is their own fault, and one twenty-five-millionth part of the United States ought not to be of great weight. If the word "extracted" does not suit, and cannot, why try to find another word when there is none? Take Mr. Demaree's advice and say "honey in the comb," or honey "out of the comb," and the stupidest person in the country, if he has the least bit of reasoning, can see what is meant. I have been disgusted to see some of the simple, silly ideas expressed by some correspondents on this subject.

Lancaster, ⊙ Mass., Aug. 22, 1887.

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Home Farm.

## The Hive for Maine.

J. E. POND.

Some years ago I wrote an article in praise of the Langstroth hive and frame, which was criticised quite severely, as recommending a frame too shallow for down-east winters. The criticisms were all theoretical, and based upon the idea that deep frames were needed in Maine, and that a frame as shallow as the Langstroth, would prove disastrous in cold weather.

As time passes on, I find a change in the opinions of bee keepers of experience, and that now they are rapidly falling into line with my own views.

Mr. J. B. Mason, one of the ablest apiarists in the country, combated me quite strongly for a time, but after a series of experiments, came over to my side of the question, and came to stay, too. He has tested matters thoroughly, and while he thinks the point is not right in theory, he knows the practice proves it to be right in fact.

Mr. Isaac Hutchins, also, has tested the matter, and he too is now a champion of the Langstroth frame.

The fact is, and for years has been, that bee-keepers have been hampered with certain opinions that have been handed down from generation to generation, and instead of breaking out a new road for themselves, have stuck to the old beaten track, without regard to whether they could find an easier road, or a shorter cut, or not.

Bee-keeping is a science, and it is a progressive science, too; and he only

can bring about the best results, who works in the best and most economical way. I do not wish to be considered as an advocate of new things because they are new, but I do advocate, most strenuously, the idea, that by carefully-conducted experiments we can bring about results far superior to those now gained. I do not advise either that all should experiment. Let those investigate who have the time and inclination; but let those who have not the time keep their ears and eyes open, ready to take advantage of new points that prove valuable, rather than to repudiate them because they are new; still I advise all to go slow, and only take up new things when the proofs are offered that they are better than the old.

Foxboro, Mass.

## Local Convention Directory.

| 1887. | *Time and place of Meeting.* |
|---|---|
| Sept. 6, 7.— | Cedar Valley, at Waterloo, Iowa. H. E. Hubbard, Sec., La Porte City, Iowa. |
| Sept. 7.— | Iowa State, at Des Moines, Iowa. A. J. Norris, Cedar Falls, Iowa. |
| Nov. 16-18.— | North American, at Chicago, Ills. W. Z. Hutchinson, Sec., Rogersville, Mich. |
| Dec. 7-9.— | Michigan State, at East Saginaw, Mich. H. D. Cutting, Sec., Clinton, Mich. |

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

## SELECTIONS FROM OUR LETTER-BOX

**Insect that Punctures Grapes.**—P. M. Puhl, Maumee, O., on Aug. 9, 1887, asks the following:

Will Prof. Cook please let the bee-keepers know, through the AMERICAN BEE JOURNAL, what insect it is that drills a small hole in the grapes when they are ripe? That seems to be the greatest trouble here.

[I shall be very glad to answer, if Mr. Puhl will send me specimens. Wasps and several kinds of birds are known to injure grapes. I shall be very glad to receive specimens of the insects, or of any others.

I hope that bee-keepers will send me specimens of insects of all kinds, in strong tin or wooden boxes. The postage is very little. I am specially desirous of getting wild bees from all parts of the country.—A. J. COOK.]

**Fearful Drouth—Taking Bee-Papers.**—I. N. Rogers, Jackson, Mich., on Aug. 10, 1887, says:

This county (Jackson) will not overstock the honey market this year; in fact, the present indications are that bees will have to be fed for winter. We are having the worst drouth, in its effect, that we have had for 30 years. White clover and Alsike seem to be completely wiped out. We have had no rain since July 4. A piece of buckwheat, which I had previously sowed, got the benefit of this rain, and, being drilled in deeply, has continued to grow nicely and is now in bloom. The bees are working on it in great numbers every day until noon. Two bee-men near me have lost several colonies lately, by starvation. One of these men I once tried to persaude to take the AMERICAN BEE JOURNAL. "No," said he, "I prefer my own experience to that of others." The other, when approached on the same subject said, "What! a bee-paper? My son-in-law had three bee-books and lost all the bees he had last winter! Only look at that, now!" They both lose heavily every winter. I have taken off but 250 lbs. of comb honey so far this year. About 150 lbs. more that was nearly ready to cap when the honey harvest closed abruptly, I took off, but have been obliged to feed back to the bees.

**The Bee Moth.**—Wm. Crawley, Redwood Falls, Minn., writes thus:

I send two specimens of moth found in my apiary. Which is the one that lays the eggs in the hive that produces the miller? Please give a description of the bee moth in the next BEE JOURNAL, and you will oblige many

*The Bee Moth—flying.*

readers. They are quite troublesome in my apiary. I find worms in my strongest colonies, and the weak ones I have to watch closely, and clean them out. How long does it take them to mature after the eggs are laid? The best way I have discovered to destroy moths is to put a lamp with the shade off, in a pail with a little water in the bottom and leave it all night in the apiary. They will go for the light, get scorched and drown. I found scores of the large dark ones on top of the hives under the shade-boards in the morning. My apiary is in the timber, which I think makes them worse than they are in the open country.

[The longer one—the female lays the eggs. The moth spins its cocoons in a crevice of the hive, or in clusters in the comb. In these they become pupæ, and in 12 to 14 days they hatch into moths. In winter they take much longer. The plan you describe is a very good one to destroy them. Further description and remedies may be found on page 547.—ED.]

**Poor Season in Ohio, etc.**—T. F. Kinsel, Shiloh, O., on Aug. 17, 1887, writes:

Bee-keepers here, to say the least, are disappointed in surplus honey. Those who had their "eggs all in one basket," will spread honey thin, and possibly wear their "old coat" another year. Bees would not even draw out foundation, but required combs, and that too, for extracting, to work with vigor. They would fill drawn combs in sections, for comb-honey. Not more than this could I accomplish. My surplus will be 10 lbs. per colony, and may be 12 lbs., spring count—about half comb-honey. Colonies are strong now. Lately a gentleman told me he once caught a swarm in the woods, but it died. Naturally the inquiry was made as to the cause. He said they died in "the winter." I supposed it was "pollen" or want of "hibernation;" but he said the "king" wasn't with them, he guessed. It was all as plain as day then! No better names, Mr. Editor, than have been suggested, viz: "honey" and "comb-honey," are needed. Stick to them.

**Extracted-Honey Discussion.**—J. M. Lyman, Toledo, O., on Aug. 18, 1885, writes as follows:

The long "extraction" discussion should have culminated long ago. In this case the virtue of reform has become utterly vitiated, and an unpleasant odor meets us, as we open the pages of the BEE JOURNAL. Do give us a *rest!* The only explanation of extracted honey I ever had to make to a honey-consumer was, the method of extraction, and so long as buyers of honey know full well what extracted honey is, why introduce another term, and the consequent labor of another educational process?

[The "rest" you so much desire will be granted, and now "let us be happy."—ED.]

**Fall Honey-Yield—Bee-House.**—Rev. S. Roese, Maiden Rock, Wis., on Aug. 22, 1887, writes:

At last the long-looked-for rain has come. We were suffering for the want of it very much, but our bees are now just booming on goldenrod and other fall flowers. If frost holds off a while longer, our fall honey-yield will be better than that of the past summer. Last week I had 2 swarms, something unusual for this season of the year, but I gave them a full outfit, taking one frame of sealed honey from each colony until they had enough, and unsealed brood besides. I look for more swarms to issue. The most of my bees not swarming this season proved to be my good luck, for all of my colonies are now very strong, and I have taken in all, from 35 colonies, 1,100 pounds of extracted, and 140 pounds of comb honey in one-pound sections. All have stores enough for winter. It seems that those colonies that swarmed in June and July, almost swarmed away, and some are

queenless. I have 2 queenless colonies, I think, for they have no young brood, and I gave them queen-cells but they tore them down; then I gave them unsealed brood, and they started queen-cells, and had them sealed over, and then tore them down.

I have completed a bee-house with the expectation of wintering my bees more safely next winter. It is 12x18 feet, with stone foundation, sheeted on the outside with inch boards; next is a layer of bricks placed on the edge. The scantlings used are 8 inches wide and 2 inches thick. It is sheeted inside with matched flooring, floor and ceiling the same, with one ventilator underground 20 feet long in extent, with an 8-inch opening coming up through the floor, and one ventilator extending out at the roof of the house, the same size. On top of the upper floor is a covering of 2 feet of sawdust; also the space between the brick and inside sheeting (6 inches) is filled with the same. Besides, I am going to bank it outside about 4 feet high, or more.

---

**Good Fall Crop Expected.**—Fred. Bott, Wabasha, Minn., on Aug. 22, 1887, says:

I receive the BEE JOURNAL every Saturday afternoon, and am very well pleased with it. I think I am doing well for a one-horse bee-keeper. I put out twelve colonies in the spring, increased them to 15 colonies by natural swarming, and obtained about 800 pounds of comb-honey and 100 pounds of extracted, so far. There is a good prospect for a good fall crop.

---

**Very Poor Honey Crop.**—P. Sunday, Goodell's, Mich., on Aug. 18, 1887, says:

The honey crop was very poor in this part of the state, on account of the long drouth. Bees gathered but very little honey from basswood and clover. We are having a nice rain now, which might help buckwheat and autumn flowers some, and produce enough honey for bees to winter on.

---

**Crop nearly a Failure.**—N. Sunnes, Elliott, Ill., on Aug. 10, 1887, writes:

The honey crop was nearly a failure here this year. From 30 colonies, spring count, I have taken only 350 pounds of extracted and 200 pounds of comb-honey. I worked 12 of my strongest colonies for comb honey; 8 of them swarmed once. I worked them on the Heddon plan for both comb and extracted honey, for in good honey seasons it is almost impossible to prevent swarming without extracting the honey before it is capped over. Ten of the weakest colonies gathered scarcely enough to winter on. Fall flowers are very scarce, owing to the dry weather we have had. I intend to move my bees about 5 miles to where there is usually an abundance of Spanish-needles, so I expect a little fall honey yet.

**Pollen in Combs — Bald-Headed Brood.**—J. H. Wellington, Saginaw, Mich., on Aug. 19, 1887, writes:

I will give my way of managing combs filled with much pollen: Extract the honey from the combs, and put them into water for half an hour or longer. If dry, they need more time. Put the combs with water into the hive of a strong colony, and inside of 24 hours the combs will be nearly as clean as new combs. The pollen can be extracted when dissolved in water. Bald-headed brood I think is caused by either a lack of comb-making bees in the hive, or a lack of honey to make comb from. Old bees with a new queen will very often leave bald-headed brood. A queen in a colony that builds up very fast with few workers, will have bald-headed brood. If the honey-flow stops suddenly, when queens are laying bountifully, colonies that have put nearly all their honey into the boxes will leave brood partly unsealed.

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**Good Increase—Painting Hives.**—A. C. Waldron, Buffalo, Minn., on Aug. 24, 1887, says:

I have had a good increase of bees but very little surplus. This is my first year, and I have increased my apiary from 2 colonies to 8, by purchasing 3 small nuclei, and then building up. The BEE JOURNAL has been a great help to me, as well as "Bees and Honey." I have some new hives with bees in them; will it injure the bees to paint those hives now?

[You can paint all but the alighting, boards, at any time, and those can be done after dark, and will dry over night. It will not injure or disturb the bees in the least.—ED.]

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**Honey-House.**—S. J. Youngman, Mich., writes:

I am about to build a house for the exclusive use of extracting honey. Any suggestions from practical bee-keepers would be thankfully received, especially as to the arrangement of the *door* and *windows*.

---

**Pure Honey, Poor Season, etc.**—A. Pinkerton, Marshalltown, Iowa, on Aug. 23, 1887, writes:

I had 150 colonies when the honey season should commence, and I made preparations for a large crop of honey. I built a shop to work in, made a lot of new hives, and bought sections enough to hold 10,000 lbs. of honey; I also made cases to hold the sections, and procured plenty of comb foundation. But about the time everything was ready, I decided to save all my fixtures for another season. I had 7 swarms and no honey. A few of my colonies have honey enough to winter on now. I do not think we need any new name for extracted honey this season, but if we did I would be satisfied to call it "pure honey." I think if I should send an order of 500 lbs. of honey, I would say, 500 lbs. of comb-honey, or 500 lbs. of honey in 1 or 2 pound sections. If I wanted extracted honey, I would say, 500 lbs. of "pure honey" in jars, pails or kegs. But I do not care much what it is called, if we only had plenty of it.

---

## Honey and Beeswax Market.

The following are our very latest quotations for honey and beeswax:

### CHICAGO.

HONEY.—We quote: In 1-lb. sections, 15@18c The color makes the difference in price.
BEESWAX.—22@24c.
Aug. 12. R. A. BURNETT, 161 South Water St.

### DETROIT.

HONEY.—New comb is very scarce, and quoted at 17@18c. per lb.
BEESWAX.—23c.
Aug. 17. M. H. HUNT, Bell Branch, Mich.

### CLEVELAND.

HONEY.—Best white 1-lbs. sold to-day at 17c.; 2-lbs., 14@15c.; dark, 10@12c. White extracted, 8c.
BEESWAX.—25c.
Aug. 25. A. C. KENDEL, 115 Ontario St.

### BOSTON.

HONEY.—New crop, 1-lb. sections, 20@22c.; 2-lb. sections, 18@20c. Short crop indicated.
BEESWAX.—25 cts. per lb.
Aug. 25. BLAKE & RIPLEY, 57 Chatham Street.

### SAN FRANCISCO.

HONEY.—We quote: Extracted, white liquid, 5@5½c.; amber colored and candied, 4@4½c.—White to extra white comb, 12@14c.; amber, 8@11c. Receipts light.
BEESWAX.—17@20c.
Aug. 20. SCHACHT & LEMCKE, 122-124 Davis St.

### SAN FRANCISCO.

HONEY.—We quote: White comb, 12@13c.; extra white comb, 14 to 15c.; dark, 7 to 10c. White extracted, 5¼@5½c.; light amber, 4½@5c.; amber and candied, 4½@4¾c. Receipts light; poor crop.
BEESWAX.—21@23c.
July 25. O. B. SMITH & CO., 423 Front St.

### MILWAUKEE.

HONEY.—Choice 1-lbs., 17@18c.; 2-lbs., 15@16c. White extracted in kegs and barrels, 7½@8c., and in tin cans, 8c.; dark in kegs and barrels, 6@6½c., in tin cans, 6½@7c. Demand good; supply limited.
BEESWAX.—25c.
Aug 26. A. V. BISHOP, 142 W. Water St.

### NEW YORK.

HONEY.—We quote: Fancy white in 1-lb. sections, 16@18c.; lhe same in 2-lbs., 13@14c.; fair to good 1-lbs., 13@15c., and 2-lbs., 10@12c. Extracted white clover, in kegs and barrels, 7@8c.
BEESWAX.—21@22c.
McCAUL & HILDRETH BROS.,
Aug. 24. 28 & 30 W. Broadway, near Duane St.

### KANSAS CITY.

HONEY.—We quote new crop: Choice white 2-lb. sections, 15c.; dark 2-lbs., 12@13c. choice white 1-lbs., 18c.; dark 1-lbs., 13@14c. Calif. white 2-lbs., 13 to 15c. Extracted, new choice white, 8@10c.; dark, 5@6c; Calif. white, 8c.; amber, 6@7c.
BEESWAX.—20 to 22c.
Aug. 25. HAMBLIN & BEARSS, 514 Walnut St.

### KANSAS CITY.

HONEY.—We quote: White 1-lbs., 16@18c.; dark, 15@16c.; white 2-lbs., 15@17c.; dark, 14@15c.; California—white 1-lbs., 15@17c., 2-lbs., 15@16c.; dark 1-lbs. 14@15c., 2-lbs. 14c. Calif. white extracted, 7@7½c.; dark, 6@6½c. No white clover in market.
BEESWAX.—No. 1, 20@22c.; No. 2, 16@18c.
Aug. 24. CLEMONS, CLOON & CO., cor 4th & Walnut

### ST. LOUIS.

HONEY.—Choice comb, 10@12c.; latter price for choice white clover in good condition. Strained, in barrels, 4@4½c. Extra fancy, of bright color and in No. 1 packages, ½-cent advance on above. Extracted, in bbls., 4½@5½c.; in cans, 5½ to 6c.—Market very firm at above prices.
BEESWAX.—21c. for prime.
Aug. 2. D. G. TUTT & CO., Commercial St.

### CINCINNATI.

HONEY.—We quote for extracted, 3@7c. per lb. Comb honey has been sold out perhaps better than ever before at this time, only remnants of dark honey being left. Choice white would readily bring 15c. in a jobbing way.
BEESWAX.—Fair demand,—20@22c. per lb. for good to choice yellow.
Aug. 19. C. F. MUTH & SON, Freeman & Central Av.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

Issued every Wednesday by

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At One Dollar a Year.

ALFRED H. NEWMAN,
BUSINESS MANAGER.

# Special Notices.

**To Correspondents.**—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

**As there is Another** firm in Chicago by the name of "Newman & Son," we wish our correspondents would write "American Bee Journal" on the envelope when writing to this office. Several letters of ours have already gone to the other firm (a commission house), causing vexatious delay and trouble.

**We will Present** Webster's Dictionary (pocket edition), and send it by mail, post-paid, for two subscribers with $2. It is always useful to have a dictionary at hand to decide as to the spelling of words, and to determine their meaning.

**Money Orders** can now be obtained at the Post Offices at reduced rates. Five dollars and under costs now only 5 cents. As these are absolutely safe, it will pay to get them instead of the Postal Notes which are payable to any one who presents them, and are in no way safe.

**Red Labels** for one-pound pails of honey, size 3x4½ inches.—We have now gotten up a lot of these Labels, and can supply them at the following prices: 100 for $1.00; 250 for $1.50; 500 for $2.00; 1,000 for $3.00; all with name and address of apiarist printed on them—by mail, postpaid.

**E. Duncan Sniffen,** Advertising Agent, 3 Park Row, New York, inserts advertisements in all first-class Newspapers and Magazines with more promptness and at lower prices than can be obtained elsewhere. He gives special attention to writing and setting up advertisements in the most attractive manner, and guarantees entire satisfaction. In all his dealings, he is honorable and prompt. Send for his Catalogue of first-class advertising mediums. Mailed free. 52A40t

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HISTORY OF THE UNITED STATES—from 432 to 1887.—320 pages.—Price, $2 00.

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The extra 10 cents is for postage on the book, which must be selected by the subscriber at the time of sending the subscription, and cannot be afterwards exchanged.

The book selected will be mailed in a cardboard case, at the subscriber's risk; if lost it cannot be replaced. Be sure to write your name, post-office, county and State plainly, and then the risk of loss is *very* small. The subscriptions can commence at any time.

Remember, the amount is **$2.10** for both papers, and the Book and postage.

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**When Renewing** your subscription please try to get your neighbor who keeps bees to join with you in taking the BEE JOURNAL. It is now *so cheap* that no one can afford to do without it. We will present a **Binder** for the BEE JOURNAL to any one sending us three subscriptions—with $3.00—direct to this office. It **will pay** any one to devote a few hours, to get subscribers.

**Enameled Cloth** for covering frames, price per yard, 45 inches wide, 20 cents; if a whole piece of 12 yards is taken, $2.25; 10 pieces, $20.00; if ordered by mail, send 15 cents per yard extra for postage.

**Preserve your Papers** for reference. If you have no **BINDER** we will mail you one for 60 cents, or you can have one FREE if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

☞ **Sample Copies** of the BEE JOURNAL will be sent FREE upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office, or we will send them all to the agent.

**Yucca Brushes** are employed for removing bees from the combs. They are a soft, vegetable fiber, and do not irritate the bees. We can supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

**Will you Exhibit at the Fair?** If so, we will supply you all the copies of the BEE JOURNAL that you may desire to distribute to the bee-keepers you may meet there. We also have colored posters to put up over exhibits of honey, wax, supplies, etc. Send for them early, so as to be sure to have them on hand in time. They will cost you nothing, but we should like to have you get up a club for the BEE JOURNAL, if you can possibly do so.

**We Supply** Chapman Honey-Plant seed at the following prices: One-half ounce, 50 cents; 1 ounce, $1; 2 ounces, $1.50; 4 ounces, $2; ½ pound, $3; 1 pound, $5. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

☞ The Union Bee-Keepers' Association of Western Iowa will hold their annual picnic at the apiary of Thomas Chantry, near Casey, Iowa, on Sept. 15, 1887. All invited.

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**We pay 20 cents per pound,** delivered here, for good Yellow Beeswax. To avoid mistakes, the shipper's name should always be on each package.

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ELEVEN Essays by eleven prominent bee-keepers, sent by mail for 10 cents.
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## WANTED,

TO correspond with parties who have any **Honey, Apples, Potatoes, Peaches, Fruits or Vegetables** of any kind for sale or for shipment. Address,
**EARLE CLICKENGER & CO.,**
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☞ Thos. G. Newman & Son, of Chicago, sell the one-piece Sections manufactured by us.

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UNTIL further notice, I will send by return mail, safe arrival guaranteed, Good QUEENS from my best strains noted for gentleness and honey-gathering qualities, viz:

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| 1 Queen | $0.80 |
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Address, WM. W. CARY,
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HURRAH for the Fair!—Exhibit and extend your reputation and develop the home market by using our brilliant Chromo Card; 8 colors, full of instruction and amusement. I have a valuable strain Italian Queens.—J.H.Martin, Hartford, N.Y.
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|---|---|
| ONE Warranted Queen | $ 75 |
| Six " Queens | 4.00 |
| Two dozen " " | 15.00 |
| Select Tested Queen | 1.50 |

☞ Orders filled by return mail.

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**14** *oz.* **Glass Jars** *$5.25 per gross, including Corks and Labels. 1 1-2 & 2 gross in a Case, Send for Catalogue.*

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21D10t

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☞ Do not fail to send for descriptive Circular; if you have not my 1886 Circular, send for that too.

JAMES F. WOOD,
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THIS **new size** of our Tapering Honey Pails is of uniform design with the other sizes, having the top edge turned over, and has a bail or handle,—making it very convenient to carry. It is well-made and, when filled with honey, makes a novel and attractive small package, that can be sold for 20 cents or less. Many consumers will buy it in order to give the children a handsome toy pail. **PRICE, 75 cents per dozen, or $5.00 per 100.**

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